# Column 7: Exploring Mysteries of Living: Behavior and Behaviorology



**A Los Alamos member of The International Behaviorology Institute**

***Why these Columns?*** Because human behavior causes global problems, and solving these problems requires changes in human behavior… So *everyone* benefits from knowing something about the natural science of human behavior (called behaviorology) that these columns relate. Having first appeared as newspaper columns, these columns began appearing on **BehaviorInfo.com** starting in 2020.

These columns comprise a journey, sometimes uncomfortable, often fun, always revealing. The journey explores some fascinating and recent (in the last 100 years) scientific discoveries, and the benefits we derive from them. These discoveries concern nature, human nature, the nature of human behavior, and even consciousness and reality.

Additional topics also have direct and significant effects on human existence and experience, although at this point the names of many may surely sound overly technical. These topics include shaping, fading, evocation, emotions, feelings, reinforcement, personhood, verbal behavior, values, rights, ethics, morals, robotics, the alternatives to coercion and punishment, and even life and death.

The behaviorology discipline covers details in many such topics. Details for basic principles may change a little as new research data and conclusions gradually accumulate. In comparison, these columns cover some generally stable highlights about behavior and its scientific causes.

We approach the story of behavior and its causes as natural scientists. Traditional natural sciences cover the basic subject matters of energy, matter, and life forms as well as their related extensions. These thus include physics, chemistry, and biology, along with astronomy, geology, physiology, and so on.

We can see the beginnings of all these sciences with Galileo's telescopic observations in the early 1600s. The natural science we examine in these columns, emerging over the last 100 years, concerns the subject matter that here we can call "life functions." It not only covers but clarifies and expands the content of the ancient dictum, "know thyself."

This natural science encompasses all behavior, especially human nature and human behavior, the behavior of you and me, of friends and trouble makers, of the ordinary and

the extreme, of the shy and the obvious. Thus focused on behavior, we call this science "Behaviorology" and, across these columns, we explore its historical, conceptual, philosophical, analytical, and engineering aspects as part of discovering many of its principles, laws, and applications.

Here is a bigger picture to orient us. Many human intellectual endeavors start out on the foundation of some basic assumptions. People use the term *philosophy* to encompass the combined variety of assumptions behind any endeavor. And those assumptions actually exert a vital, quality controlling effect that helps keep the behavior of those connected with the endeavor within appropriate boundaries.

That quality control from assumptions occurs in both scientific and non–scientific activities, and even underlies many emotional activities. We describe this control by saying that the philosophy "informs" the endeavor.

With scientific activities we use the term *philosophy of science* to denote the set of informing assumptions. We cover philosophy of science just enough to clarify its role and value, including for behaviorology, which is filling a chair at the roundtable of the basic natural sciences along with physics, chemistry, and biology. We use the term *Naturalism* for the general philosophy of science of all these natural sciences.

Some sciences also develop additional assumptions that extend naturalism to further inform their work. Behaviorology is one such science, because studying human nature and human behavior scientifically presents assumptions and concerns that are specific to particular aspects of behavioral phenomena.

To denote the current extensions of naturalism that inform the natural science of behavior, behaviorological scientists have used the term, "radical behaviorism." It is not radical in the sense of extremist. It is radical in the sense of comprehensive. This and other considerations prompt proposals for alternative labels, such as "behavioral materialism."

Another, "behavioral naturalism," avoids any misunderstandings about the term "materialism" while also showing the connection with the general Naturalism of the natural sciences. You can follow the discussions in the journal issues in the reference at the end of this column.

Part of this behavioral component of philosophy of science includes our acknowledgement that all scientists are also behaving organisms. The same kinds of natural variables that affect everyone else's behavior also affect all scientists' behavior.

Actually, several different disciplines claim behavior as a subject matter, including theology, psychology, and behaviorology. They are not equal. While the distinction between theology and science got established centuries ago, some confusion lingers over the other two, so we should clear this up. Behaviorology is not a part of, nor any kind of, psychology. These two are distinct and separate disciplines.

Behaviorology is a natural science, using experimental methods and adhering to the same fundamental assumption as all other natural sciences, such as "work only with real, measurable events as independent and dependent variables."

Psychology, however, is a discipline that uses experimental methods but refuses, as a discipline, to adhere to the fundamental assumptions that other natural sciences share. I say "as a discipline," because psychology has always had a handful of members who disagree, some trying to move psychology toward natural–science status and others trying to move psychology away from experimental methods.

Fifty years ago, those who became behaviorologists were among the former group while some humanistic psychologists were among the latter group. Neither group has been successful in psychology, although the so–called humanistic psychologists have remained accepted members among the schools of psychology. And most psychologists try to help people as best they can.

In general the relation between behaviorology and psychology approximates the relation between biology and creationism. Both psychology and creationism claim to be sciences, because they use scientific methods. However, neither of them qualifies as *natural* science, because they both appeal to entities or events *outside* of nature, such as superstitious or mystical or supernatural or other non–natural, often pre–scientific events, for example, inner agents like minds, psyches, souls, or selves.

Such agents may exist as matters of faith or belief that represent perspectives grounded in different assumption than those that ground natural science. Also, natural scientists fail to see the *secular,* that is, non–religious, mystical accounts of psychology as in any way better than *theological,* that is, religious, mystical accounts.

The implications of those relations deserve consideration. If discussing the implications brings about appropriate action, the results can elevate the status of naturalism and the natural sciences, lead to solving more human problems, reduce susceptibility to superstition and mysticism (both theological and secular), and improve human intellectuality, rationality, and emotionality.

Perhaps these columns help such discussions, including reminding us of appropriate mutual respect among different perspectives, as in the first of my ten commandments of natural science (in the reference note).

Naturalism, the general philosophy of science in the natural sciences, has among its characteristics one that particularly helps achieve those outcomes: Natural scientists respect what they call the continuous, natural, functional history of events. This refers to some sequential, “causal” connections that events have with various events occurring before and after them.

Respecting those connections enables scientific analyses to show parallels across disciplinary lines and levels of analysis, which enhances appreciation among sciences. In contrast, ignoring the natural functional history of events can lead to unnecessary, even dangerous compromises between natural sciences and non–scientific disciplines that make claims of magical origination of events.

An example is the 400–year–old, ultimately unhelpful, and yet still extant, give–away to theology of human nature and human behavior considerations in exchange for religious authorities leaving scientists, then called natural philosophers, alone as they began covering nearly everything else.

Sadly, that compromise has helped prevent the widespread appreciation of considering behavior scientifically, which is why the science is only 100 years old and still little known. Yet all our present global problems need some input from the natural science of human behavior for their solutions. Without this input we likely cannot solve our problems.

Unsolved global problems lead to well–known damaging outcomes, some quite extreme. How fast can you chase rats with bats? This need provides extreme contingencies that make humanity unable any longer to afford that compromise, if it ever could.

Conversely, here is an example of cross–discipline parallels that stems from respecting the natural functional history of events: Behaviorology accounts for a stimulus evoking a behavior. For instance the approach of a fast moving object evokes ducking the object. Meanwhile, not as reductionism but in parallel, biology provides details at the physiological level about how an energy change at receptor cells affects behavior. For instance the energy trace of light reflected from the approach of a fast moving object strikes the retina and so sets off a cascade of changes through the nervous system that culminates in the mediation of a behavior, like ducking.

The occurrence of the energy trace "caused" the ducking by causing the nervous system activity. In additional parallels, chemistry accounts for the details at the cellular and sub–cellular level about the physiological events, while physics strives for atomic and sub–atomic details about the chemical events.

All four disciplines, each at its own level of analysis, together provide a comprehensive account of the events, although we seldom need all these levels of analysis at the same time. We need not turn to physics for causes of behavior.

But if natural scientists instead compromise by allowing claims that behavior in general, or ducking in this particular case, results from the spontaneous, willful act of some putative inner agent, then this whole subject matter of human behavior, which is vital for human survival, is lost to purveyors of non–science.

Such compromises give unearned status to mystical accounts, which causes natural science to lose ground, reducing its benefits. The resolution now revolves around understanding behaviorology better so as to avoid falling into such compromises.

Regarding suggested labels to replace "radical behaviorism," see the Special Section in the combined Spring/Fall 2019 issue, Volume 22, of the *Journal of Behaviorology.* This issue includes the article proposing "behavioral materialism" along with several peer commentaries. My separate article, "Ten Commandments of Natural Science," also appears in this issue. Subsequent issues contain additional commentaries, including one suggesting "behavioral naturalism." Find these issues on the "Journal" page at www.behaviorology.org.

*Writing these columns occurs separately from membership in The International Behaviorology Institute (TIBI, at www.behaviorology.org where you can always find more information and resources). The author is not speaking for TIBI, and the author and TIBI need not be in agreement. TIBI welcomes feedback, members, and donations (501.c.3). This is column 7 of 72.*